

ITEM 8 BUILDING, FIRE AND OTHER  
SFM 05/04  
Part 2,  
Sub-Items 8-1 through 8-25  
Chapters 1, 2, 3, 5, 9, 10, 11A, 35 and Appendix Chapter 3A: Various sections

## EXPRESS TERMS

ITEM 8-1 AS RESUBMITTED

### CHAPTER 1 – ADMINISTRATIVE

#### SECTION 101-TITLE, PURPOSE AND SCOPE

##### 101.17.14 SFM-Office of the State Fire Marshal.

*Any building or structure used or intended for use as an asylum, jail, mental hospital, hospital, ~~sanitarium~~, home for the ~~aged~~ elderly, children's nursery, children's home or institution, school or any similar occupancy of any capacity.*

*Any theater, dance hall, skating rink, auditorium, assembly hall, meeting hall, nightclub, fair building, or similar place of assemblage where 50 or more persons may gather together in a building, room or structure for the purpose of amusement, entertainment, instruction, deliberation, worship, drinking or dining, awaiting transportation, or education.*

*Authority Cited-Health and Safety Code Section 13143 and 18949.2(b), (c)  
Reference-Health and Safety Code Section 13143*

**NOTE:** *The specific statutes authorizing the SFM to propose this amendment to section 101.17.14 as shown above relating to Group E, Division 3 Occupancies are as follows:*

- ♦ *Health and Safety Code section 13143 and 18949.2(b), (c)*
- ♦ *Health and Safety Code section 1502, 1531.2, 1531.3 and 1584*

#### ITEM 8-1 – Committee Recommendations

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APPROVED AS RESUBMITTED

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\* \* \*  
(END OF ITEM)

ITEM 8-2 AS SUBMITTED

#### ITEM 8-2 – Committee Recommendations


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FURTHER STUDY

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(END OF ITEM)

ITEM 8-3 AS SUBMITTED

ITEM 8-3 – Committee Recommendations

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(END OF ITEM)

ITEM 8-4 AS SUBMITTED

ITEM 8-4 – Committee Recommendations

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(END OF ITEM)

ITEM 8-5 AS SUBMITTED

ITEM 8-5 – Committee Recommendations

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(END OF ITEM)


ITEM 8-6 AS SUBMITTED

**[For SFM] 305.11.3 Exempted Portable Buildings.** A portable building as defined in Section 217 and certified by the public school administration as being sited on campus for less than three years is not required to install an automatic fire detection, automatic alarm or automatic sprinkler system.

NOTE: The specific statutes authorizing the SFM to propose these new regulations as shown above relating to Group E Occupancies are as follows:

- ♦ Health and Safety Code sections 13143 and 18949.2(b), (c)

ITEM 8-6 – Committee Recommendations

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APPROVED AS SUBMITTED

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(END OF ITEM)

**ITEM 8-7 AS SUBMITTED**

**ITEM 8-7 – Committee Recommendations**

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**DISAPPROVED**

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\*\*\***SFM** withdrew this item for further study when CAC recommended disapproval.

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(END OF ITEM)

**ITEM 8-8 AS SUBMITTED**

**ITEM 8-8 – Committee Recommendations**


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SFM WITHDREW THIS ITEM.

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(END OF ITEM)

**ITEM 8-9 AS SUBMITTED**

**ITEM 8-9 – Committee Recommendations**

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**FURTHER STUDY**

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(END OF ITEM)

**ITEM 8-10 AS SUBMITTED**

**ITEM 8-10 – Committee Recommendations**

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**FURTHER STUDY**

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(END OF ITEM)

**ITEM 8-11 AS SUBMITTED**

**ITEM 8-11 – Committee Recommendations**

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SFM WITHDREW THIS ITEM.

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(END OF ITEM)

**ITEM 8-12      AS SUBMITTED**

**ITEM 8-12 – Committee Recommendations**

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SFM WITHDREW THIS ITEM.

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(END OF ITEM)

**ITEM 8-13      AS SUBMITTED**

**ITEM 8-13 – Committee Recommendations**

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SFM WITHDREW THIS ITEM.

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(END OF ITEM)

**ITEM 8-14      AS RESUBMITTED**

**Chapter 9  
Fire Protection Systems**

**SECTION 904-FIRE EXTINGUISHING SYSTEMS**

**904.1 Installation Requirements.**

**904.1.1 General.** In buildings used for high-piled combustible storage, fire prevention shall be in accordance with the [For SFM] California Fire Code.

**Section 904.1.2 Standards.** Fire-extinguishing systems shall comply with UBC Standards 9-1 and 9-2. [For SFM] Fire-extinguishing systems shall comply with the applicable standards in Chapter 35 and Article 91 of the California Fire Code. The following standards in Chapter 35 shall be utilized:

~~NFPA 11-1994, Foam Extinguishing Systems; NFPA 11A-1994, Medium- and High-Expansion Foam Systems; NFPA 12-1997, Carbon Dioxide Fire Extinguishing Systems; NFPA 12A, 1992, Halon 1301 Systems; NFPA 2001-1996, Clean Agent Fire Extinguishing Systems; NFPA 13-1999 as amended, Installation of Sprinkler Systems; NFPA 13D-1999, Installation of Sprinkler Systems in One- and Two-Family Dwellings and Mobile Homes (Installed in Congregate Living Health Facilities); NFPA 13R-1999, Installation of Sprinkler Systems in Residential Occupancies Up to and Including Four Stories in Height; NFPA 14-2000, Standpipe and Hose Systems; NFPA 15-1996, Water Spray Fixed Systems; NFPA 16A-1994, Closed-head Foam-water Sprinkler Systems; NFPA 17-1994, Dry Chemical Extinguishing Systems; NFPA 17A-1994, Wet Chemical Extinguishing Systems; NFPA 20-1996, Centrifugal Fire Pumps; NFPA 22-1996, Water Tanks for Private Fire Protection; NFPA 24-1995, Private Fire Service Mains (except as noted in Section 904.1.2, Exception 2).~~

**NOTE:** The specific statute authorizing the SFM to propose these new regulations as shown above relating to Fire Protection Systems is as follows:

- ◆ Health and Safety Code sections 13114 & 18949.2(b), (c)

4. **[For SFM] 904.1.2.1.** Group I Occupancies housed in existing single-family dwellings may utilize the following deviations from NFPA 13, provided the floor area and height of any single – or multi-story building does not exceed those allowed by Table 5-B, and further provided the system is hydraulically calculated in accordance with light hazard requirements without allowance for hose.

{The remainder of the existing text of Section 904.1.2, exception no. 4 is to remain as published in the 2001 CBC.}

**NOTE:** The specific statutes authorizing the SFM to propose this amendment to section 904.1.2.1 as shown above relating to Group I, Division 1.2.1 Occupancies are as follows:

- ◆ Health and Safety Code sections 13143 and 18949.2(b), (c)
- ◆ Health and Safety Code sections 1531.2, 1531.3, 1570.7 and 1584
- ◆ Title 22, Division 5, Chapter 10, Article 1, commencing with Section 78007

#### ITEM 8-14 – Committee Recommendations



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APPROVED AS RESUBMITTED

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(END OF ITEM)

#### ITEM 8-15 AS SUBMITTED

##### 904.2 Automatic Fire-extinguishing Systems.

##### 904.2.1 Where required.

**[For SFM]** For special provisions on hazardous chemicals and magnesium, and calcium carbide, see the California Fire Code.

**NOTE:** The specific statute authorizing the SFM to propose this amendment as shown above in section 904.2.1, is as follows:

- ◆ Health and Safety Code sections 13143 and 18949.2(b), (c)

#### ITEM 8-15 – Committee Recommendations



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APPROVED AS SUBMITTED

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(END OF ITEM)

#### ITEM 8-16 AS SUBMITTED

#### ITEM 8-16 – Committee Recommendations

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(END OF ITEM)

**ITEM 8-17 AS SUBMITTED**

ITEM 8-17 – Committee Recommendations

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SFM WITHDREW THIS ITEM.

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(END OF ITEM)

**ITEM 8-18 AS SUBMITTED**

ITEM 8-18 – Committee Recommendations

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(END OF ITEM)

**ITEM 8-19 AS SUBMITTED**

ITEM 8-19 – Committee Recommendations

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**ITEM 8-20 AS RESUBMITTED**

**1007.5 Group I Occupancies.**

**Section 1007.5.4 Corridors.** Corridors serving any area caring for one or more nonambulatory persons shall not be less than 8 feet (2438 mm) in width.

**EXCEPTIONS:** 1. Corridors serving surgical areas of Group I, Division 1.2 Occupancies shall not be less than 6 feet (1829 mm) in width.

**[For SFM]** 2. In Group I, Division 3 Occupancies such as jails, prisons, reformatories and similar buildings with open-barred cells forming corridor walls, the open-barred cell corridor walls or open-barred cell corridor doors need not be fire resistive.

Any change in elevation in a corridor serving nonambulatory persons shall be by means of a ramp.

Corridors shall comply with the requirements of Section 1004.3.4, except that in hospitals and nursing homes classified as Group I, Division 1.1, **[For SFM]** 2, or 3 Occupancies, the following exceptions apply:

1. Nurses' stations, **[For SFM]** protected by automatic sprinklers and smoke detector(s) including space for doctors' and nurses' charting and communications, constructed as required for corridors need not be separated from corridors.

1.1 **[For SFM]** Nurse's stations in new and existing facilities are regulated in the California Fire Code and the California Code of Regulations, Title 19.

1.2 **[For SFM]** Smoke detector(s) shall be interconnected to the facility's fire alarm system and shall be placed and installed in accordance with the manufacture's specifications.

**NOTE:** The specific statute authorizing the SFM to propose this amendment to section 1007.5.4 as shown above relating to Group I Occupancies is as follows:

- ♦ Health and Safety Code section 13143

#### ITEM 8-20 – Committee Recommendations

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(END OF ITEM)

#### ITEM 8-21      AS SUBMITTED

#### ITEM 8-21 – Committee Recommendations

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(END OF ITEM)

#### ITEM 8-22      AS SUBMITTED

{Department of Housing & Community Development (HCD) has submitted a code change package that clearly indicates that the entire Chapter 11A is being repealed and replaced with a new Chapter 11A. Egress and Area of Evacuation Assistance is under the authority of the SFM. In conjunction with HCD the SFM is submitting Section 1118A as shown below to be included in the new Chapter 11A.}

## Chapter 11A HOUSING ACCESSIBILITY

### **~~SECTION 1108A [FOR SFM]—EGRESS AND AREAS OF REFUGE~~**

#### **~~1108A.1 [For SFM] Means of Egress.~~**

**~~1108A.1.1 [For SFM] General.~~** ~~All required accessible spaces shall be provided with not less than one accessible means of egress. When more than one exit is required from any accessible space, each accessible portion of the space shall be served by not less than two accessible means of egress. The maximum travel distance from any accessible space to an area of refuge shall not exceed the travel distance set forth in Chapter 10.~~

~~Each accessible means of egress shall be continuous from each required accessible occupied area to a public way and shall include accessible routes, ramps, exit stairs, elevators, horizontal exits or smoke barriers.~~

**~~EXCEPTIONS:~~** ~~1. Areas of evacuation assistance are not required in buildings or facilities having a supervised automatic sprinkler system.~~

~~2. Areas of evacuation assistance are not required in alterations of existing buildings.~~

**~~Note:~~** ~~This section is also adopted by the Division of the State Architect, Access Compliance, for buildings not regulated by the State Fire Marshal.~~

### **[For SFM] SECTION 1118A EGRESS AND AREAS FOR EVACUATION ASSISTANCE**

**1118A.1 General.** In buildings or portions of buildings required to be accessible, accessible means of egress shall be provided in the same number as required for exits by Chapter 10. When an exit required by Chapter 10 is not accessible, an area for evacuation assistance shall be provided. Areas for evacuation assistance shall comply with the requirements of this code and shall adjoin an accessible route of travel complying with this code.

**EXCEPTIONS:** 1. Areas of evacuation assistance are not required in buildings or facilities having a supervised automatic sprinkler system.

2. In alterations of existing buildings, areas of evacuation assistance are not required.

#### **1118A.2 Areas for Evacuation Assistance.**

**1118A.2.1 Location and Construction.** An area for evacuation assistance shall be one of the following:

1. A portion of a stairway landing within a smoke proof enclosure, complying with Section 1005.3.3.
2. A portion of an exterior exit balcony located immediately adjacent to an exit stairway when the exterior exit balcony complies with Section 1006.3. Openings to the exterior of the building located within 20 feet (6096 mm) of the area for evacuation assistance shall be protected with fire assemblies having a three-fourths-hour fire-protection rating.
3. A portion of a one-hour fire-resistive corridor complying with Section 1004.3.4 located immediately adjacent to an exit enclosure.
4. A vestibule located immediately adjacent to an exit enclosure and constructed to the same fire resistive standards as required by Section 1004.3.4.
5. A portion of a stairway landing within an exit enclosure which is vented to the exterior and is separated from the interior of the building by not less than one-hour fire-resistive door assemblies.
6. When approved by the building official, an area or room, which is separated from other portions of the building by a smoke barrier. Smoke barriers shall have a fire-resistive rating of not less than one hour and shall completely enclose the area or room. Doors in the smoke barrier shall be tight fitting smoke- and draft-control assemblies having a fire-protection rating of not less than 20 minutes and shall be self-closing or automatic closing. The area or room shall be provided with an exit directly to an exit enclosure.



When the room or area exits into an exit enclosure which is required to be of more than one-hour fire-resistive construction, the room or area shall have the same fire-resistive construction, including the same opening protection, as required for the adjacent exit enclosure.

7. An elevator lobby complying with Section 1118A.3.

**1118A.2.2 Size.** Each area for evacuation assistance shall provide at least two accessible areas that are not less than 30 inches by 48 inches (762 mm by 1219 mm). The area for evacuation assistance shall not encroach on any required exit width. The total number of such 30-inch by 48-inch (762 mm by 1219 mm) areas per story shall not be less than one for every 200 persons of calculated occupant load served by the area for evacuation assistance.

**EXCEPTION:** The building official may reduce the minimum number of 30-inch by 48-inch (762 mm by 1219 mm) areas to one for each area for evacuation assistance on floors where the occupant load is less than 200.

**1118A.2.3 Adjacent Stairway Width.** Each stairway adjacent to an area for evacuation assistance shall have a minimum clear width of 48 inches (1219 mm) between handrails.

**1118A.2.4 Two-Way Communication.**

**1118A.2.4.1 Communication and Location.** A telephone with controlled access to a public telephone system or another method of two-way communication shall be provided between each area of refuge and the primary entry. The fire department may approve a location other than the primary entry

**1118A.2.4.2 Visible and Audible Communication method.** A method of two-way communication with both visible and audible communication shall be provided between each area of evacuation assistance and the primary entry. A button in the area of rescue assistance shall activate both a light in the area of rescue assistance indicating that rescue has been requested and a light at the primary entry indicating that rescue is being requested. A button at the primary entry shall activate both a light at the primary entry and a light in the area of rescue assistance indicating that the request has been received.

**1118A.2.5 Identification.** Each area for evacuation assistance shall be identified by a sign with the “**International Symbol of Accessibility**” and text that clearly reads, “**AREA FOR EVACUATION ASSISTANCE.**”

This sign shall be illuminated when exit sign illumination is required. In each area for evacuation assistance, instructions on the use of the area under emergency conditions shall be posted adjoining the two-way communication system.

**1118A.3 Area for Evacuation Assistance, High Rise Alternative.** Within a building of any height or occupancy constructed in accordance with the requirements of Sections 403.1 through 403.10, an area for evacuation assistance may be located in the elevator lobby when:

1. The area for evacuation assistance complies with the requirements for size, two-way communication and identification as specified in Section 1118A.2; and
2. Elevator shafts and adjacent lobbies are pressurized as required for smoke-proof enclosures in Section 1005.3.3. Such pressurization system shall be activated by smoke detectors on each floor located in a manner approved by the building official. Pressurization equipment and its ductwork within the building shall be separated from other portions of the building by a minimum two-hour fire-resistive construction.

**1118A.4 Emergency Warning Systems/ Accessibility Requirements.** Emergency warning systems as part of the fire-alarm system shall be designed and installed in accordance with NFPA 72 as amended in Chapter 35.

**1118A.5 Emergency Egress.** *Accessible routes serving any accessible space or element shall also serve as a means of egress for emergencies or connect to an accessible place of refuge. Such accessible routes and places of refuge shall comply with the requirements established by the enforcement agency.*

**NOTE:** The specific statutes authorizing the SFM to propose this amendment to section 1118A as shown above is as follows:

Health and Safety Code sections 13143 and 18949.2(b), (c)

**ITEM 8-22 – Committee Recommendations**



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**APPROVED AS SUBMITTED**

§ 1118A was heard by the **A-CAC**, so **BFO-CAC** took no action but to recommend editorial correction of “area” or “place” of “refuge” to “area of evacuation” for consistency of language.

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(END OF ITEM)

**ITEM 8-23 AS SUBMITTED**

**Chapter 35  
UNIFORM BUILDING CODE STANDARDS**

**SECTION 3504-RECOGNIZED STANDARDS**

**Part II – UBC Standards**

UBC Std.  
And Sec.

**TITLE AND SOURCE**

**CHAPTER 9**

9-1; 307.11.3, 321.1, 403.2, 404.3.1, 405.1.1, 804.1, 902, 904.1.2,  
904.1.3, 904.2.6.3, 904.2.7, 904.3.2, 2603.7.1, 2603.8.1

Installation of Sprinkler Systems. Standard for the Installation of Sprinkler Systems, NFPA 13-1991 **[For SFM] NFPA 13-1996-2002**, National Fire Protection Association.

9-2; 902, 904.1.2, 904.5.1

Standpipe Systems. The Standard for Installation of Standpipe Systems and Hose Systems, NFPA 14-1993 **[For SFM] NFPA 14 -1996-2003**, National Fire Protection Association.

9-3; 804.1, 805, 902, 904.1.2, 904.1.3, 2603.7.1, 2603.8.1

Installation of Sprinkler Systems in Group R Occupancies Four Stories or Less. Standard for the Installation of Sprinkler Systems in Residential Occupancies up to Four Stories in Height, NFPA 13R-1989 **[For SFM] NFPA 13R -1996-2002**, National Fire Protection Association.

**ITEM 8-23 – Committee Recommendations**



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**Part IV – Recognized Standards****Part IV – Recognized Standards****3504.1 [SFM] California Building Code Standards****3504.1.1 [For SFM] Whenever the UBC refers to:**

UBC Standard	It shall be construed to mean:
9-1	NFPA 13
9-2	NFPA 14
9-3	NFPA 13R

**3504.1.2 [For SFM] California State Fire Marshal (SFM) Standards are found in the California Code of Regulations, Title 24, Part 12.**

SFM 12-3, Releasing Systems for Security Bars in Dwellings

SFM 12-4.100, Smoke or Heat Ventilators.

SFM 12-7-1, Fire Tests of Building Construction and Materials

SFM 12-7-2, Fire Dampers

SFM 12-7-3, Fire-testing Furnaces

SFM 12-7A-1, Exterior Wall Siding and Sheathing, Direct Flame Exposure

SFM 12-7A-2, Exterior Window, Direct Flame Exposure

SFM 12-7A-3, Unloaded Deck, Direct Flame Exposure

SFM 12-7A-4, Unloaded Deck, Burning Brand Exposure

SFM 12-7-4, Fire Door Assembly Tests.

SFM 12-8-100, Room Fire Tests for Wall and Ceiling Materials.

SFM 12-8-1A, Calculation of the Total Rate of Heat and Carbon Monoxide or Carbon Dioxide Production

SFM 12-8-1B, Mounting Techniques for Wall and Ceiling Interior Finish Material

SFM 12-10-1, Power Operated Exit Doors

SFM 12-10-2, Single Point Latching or Locking Devices

SFM 12-10-3, Emergency Exit and Panic Hardware

SFM 12-72-1, Protective Signaling Systems

SFM 12-72-2, Single and Multiple Station Fire Alarm Devices

SFM 12-73-3, Smoke Detectors, Combustion Products Type

~~(The California State Fire Marshal standards referred to above are found in the California Code of Regulations, Title 24, Part 12.)~~

**3504.1.3 [For SFM] National Standards.**

~~{The SFM is repealing the numbering sequencing of section 3504.1.3 and renumbering as shown below:}~~

1. NFPA 11, ~~1998~~ 2002 Edition, Low-Medium-High Expansion Foams
2. NFPA 11A, 1999 Edition, Medium- and High-Expansion Foam Systems
3. NFPA 12, ~~1998~~ 2000 Edition, Carbon Dioxide Extinguishing Systems
4. NFPA 12A, 1997 Edition, Halon 1301 Fire Extinguishing Systems
5. NFPA 13, ~~1999~~ 2002 Edition, The Installation of Automatic Sprinkler Systems, as amended.
6. NFPA 13D, ~~1999~~ 2002 Edition, Installation of Sprinkler Systems in One- and Two-Family Dwellings and Manufactured Homes

7. NFPA 13R, ~~1999~~ 2002 Edition, Installation of Sprinkler Systems in Residential Occupancies up to and Including Four Stories in Height
8. NFPA 14, ~~2000~~ 2003 Edition, Installation of Standpipe, ~~Private Hydrant~~, and Hose Systems
9. NFPA 15, ~~1996~~ 2001 Edition, Water Spray Fixed Systems for Fire Protection
10. NFPA 16-~~1994~~, 1999 Edition, Installation of Deluge, Foam-Water Sprinkler and Foam-Water Spray Systems
11. NFPA 17, ~~1998~~ 2002 Edition, Dry Chemical Extinguishing Systems
12. NFPA 17A, ~~1998~~ 2002 Edition, Wet Chemical Extinguishing Systems
13. NFPA 20, 1999 Edition, Installation of Stationary Pumps for Fire Protection
14. NFPA 22, ~~1998~~ 2003 Edition, Water Tanks for Private Fire Protection
15. NFPA 24, ~~1996~~ 2002 Edition, Installation of Private Fire Service Mains and Their Appurtenances
16. NFPA 37, ~~1998~~ 2002 Edition, Installation and Use of Stationary Combustion Engines and Gas Turbines
17. NFPA 50, ~~1996~~ 2001 Edition, Bulk Oxygen Systems at Consumer Sites
18. NFPA 52, 2002 Edition, Compressed Natural Gas (CNG) Vehicular Fuel Systems Code
19. NFPA 57, 2002 Edition, Liquefied Natural Gas (LNG) Vehicular Fuel Systems Code
20. NFPA 54, ~~1996~~ 2002 Edition, National Fuel Gas Code
21. NFPA 58, ~~1998~~ 2001 Edition, Standard for the Storage and Handling of Liquefied Petroleum Gases
22. NFPA 72, 1999 Edition, National Fire Alarm Code, as amended. [The SFM does not adopt NFPA 72®, 1999 Edition, Chapter 8.]
- 22.1 NFPA 72® ,~~1999~~ 1996 Edition, National Fire Alarm, as amended, Chapter 8, Household Fire Warning Equipment
23. NFPA 92 A, 2000 Edition, Recommended Practice for Smoke-Control Systems
24. NFPA 99, ~~1999~~ 2002 Edition, Health Care Facilities, ~~Chapter 4, Gas and Vacuum Systems~~
23. NFPA 99 C, 1999 Edition, ~~Gas and Vacuum Systems~~. 26. UL 13, ~~Power-limited Circuit Cables, Second Edition, 1996~~
25. NFPA 253, ~~1984~~, 2000 Edition, Test for Critical Radiant Flux of Floor Covering Systems Using a Radiant Heat Energy Source
26. NFPA 2001, 2000 Edition, Clean Agent Fire Extinguishing Systems
27. UL 13, Power-limited Circuit Cables, Second Edition February 29, 1996
28. UL 38, Manually Actuated Signaling Boxes, Seventh Edition, March 26, 1999, with revisions through ~~April 28, 2000~~ June 12, 2001
29. UL 193, Alarm Valves for Fire-Protection Service, ~~Ninth-Tenth Edition, March 24, 1993~~ January 12, 2004
30. UL 199, Automatic Sprinklers for Fire Protection Service, Edition
31. UL 199 E Fire Test of sprinklers and Water Spray Nozzles for the Protection of Deep Fat Fryers, May 2004.
32. UL 217, Single- and Multiple-Station Smoke Alarm, ~~as amended~~, Fifth Edition, February 21, 1997 with revisions through June 15, 2004
33. UL 228, Door Closers/ HOLDERS, with or without Integral Smoke ~~Alarms- Detectors~~, Fourth Edition, April 29, 1997, with revisions through January 21, 1999

34. UL 260, Dry Pipe and Deluge Valves for Fire Protection Service, ~~Sixth~~ Seventh Edition, ~~May 27, 1994~~ March 17, 2004 with revisions through February 15, 1999
35. UL 262, Gate Valves for Fire Protection Service, ~~Seventh~~ Eighth Edition, ~~May 27, 1994~~ with revisions through January 28, 1998 February 26, 2004
36. UL 268, Smoke Detectors for Fire Protective Signaling Systems, ~~as amended~~, Fourth Edition, December 30, 1996, with revisions through ~~January 4, 1999~~ October 22, 2003
37. UL 268A, Smoke Detectors for Duct Application, ~~as amended~~, Third Edition, May 15, 1998 with revisions through April 10, 2003
38. UL 312, Check Valves for Fire-Protection Service, ~~Eighth~~ Ninth Edition, ~~June 2, 1993~~ with revisions through February 17, 1994 January 8, 2004
39. UL 346, Waterflow Indicators for Fire Protective Signaling Systems Fourth Edition, ~~May 27, 1994~~
40. UL 464, Audible Signal Appliances, ~~Seventh~~ Eighth Edition, ~~February 23, 1996~~ April 28, 2003, with revisions through ~~May 11, 1999~~ October 10, 2003
41. UL 497B, Protectors for Data Communication and Fire Alarm Circuits, ~~Second~~ Fourth Edition, ~~December 28, 1993~~ with revisions through October 20, 1994 June 14, 2004
42. UL 521, Heat Detectors for Fire Protective Signaling Systems, Seventh Edition, February 19, 1999 with revisions through October 3, 2002
43. UL 539, Single- and Multiple-Station Heat Detectors, ~~Fourth~~ Fifth Edition, ~~1995~~ January 21, 2000
44. UL 632, Electrically Actuated Transmitters ~~Sixth~~ Seventh Edition, ~~1994~~ March 29, 2000
45. UL 753, Alarm Accessories for Automatic Water Supply Valves for Fire Protection Service, ~~Sixth~~ Ninth Edition, ~~1994~~ May 7, 2004
46. UL 813, Commercial Audio Equipment, Seventh Edition, December 13, 1996, with revisions through ~~March 30, 1999~~ December 7, 1999
47. UL 864, Control Units for Fire Protective Signaling Systems, as amended, ~~Eighth~~ Ninth Edition, ~~November 27, 1996~~ September 30, 2003 with revisions through ~~March 30, 1999~~ October 29, 2003
48. UL 884, Underfloor Electric Raceways and Fittings, ~~Eighth~~ Tenth Edition, 1987 ~~Tenth Edition~~, 1998 November 30, 1998
49. UL 913, Intrinsically Safe Apparatus for Use in Class I, II, and III, Division 1, Hazardous Locations, ~~Fifth~~ Sixth Edition, ~~February 21, 1997~~ with revisions dated February 24, 1997 August 8, 2002
50. UL 916, Energy Management Equipment, Third Edition, December 23, 1998 with revisions through February 10, 2004
51. UL 924, Emergency Lighting and Power Equipment, Eighth Edition, ~~March 29, 1995~~ with revisions through and including July 11, 2001
52. UL 985, Household Fire Warning System Units, ~~as amended~~, Fifth Edition, May 26, 2000 with revisions through April 29, 2004
53. UL 1091, Butterfly Valves for Fire Protection Service ~~Fifth~~ Sixth Edition, ~~1994~~ June 3, 2004
54. UL 1424, Cables for Power-limited Fire Protective Signaling Circuits, Second Edition, ~~April 29, 1996~~
55. UL 1480, Speakers for Fire Protective Signaling Systems ~~Fourth~~ Fifth Edition, ~~July 28, 1998~~ January 31, 2003
56. UL 1481, Power Supplies for Fire Protective Signaling Systems, Fourth Edition, April 9, 1999
57. UL 1626 Residential Sprinklers for Fire Protection Service, 1.2 revised September 6, 2000

58. UL 1711, Amplifiers for Fire Protective Signaling Systems, ~~First-Third~~ Edition, January 5, 1987, with revisions October 12, 1992-February 18, 1999
59. UL 1730, Smoke Detector Monitors and Accessories (annunciators) for Individual Living Units of Multifamily Residences and Hotel/Motel Rooms Third Edition, September 18, 1998, with revisions through May 17, 1999
60. UL 1971, Signaling Devices for the Hearing Impaired ~~Second-Third~~ Edition, ~~October 17, 1995, November 29, 2002~~, with revisions through May 24, 2000-3, 2004
61. UL 1484, Residential Gas Detectors ~~Third-Fourth~~ Edition, November 30, 1994, with revisions dated December 1, 1994-December 28, 2000
62. UL 1994, Low Level Path Marking and Lighting Systems, ~~Sixth-Third~~ Edition, 1994-January 30, 2004
63. UL 2034, Single and Multiple Station Carbon Monoxide Alarms, Second Edition, October 29, 1996, with revisions through June 2, 1999-June 28, 2002
64. UL 2079, Tests for Fire Resistance of Building Joint Systems, Third Edition, July 31, 1998 as amended
65. FM Class No. 3260, ~~Flame Radiation~~ radiant Energy-Sensing Fire Detectors for Automatic Fire Alarm Signaling, February 1994 August 2000 Edition.

#### ITEM 8-24 – Committee Recommendations

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D



\*\*\*§ 3504.1.2: FURTHER STUDY due to potentially outdated referenced standards, Criterion 4.

\* \* \*

(END OF ITEM)

#### ITEM 8-25 AS RESUBMITTED

#### SECTION 3505 – AMENDMENTS TO NATIONAL STANDARDS

3505.1 [For SFM] NFPA 72, ~~1999~~ 2002 Edition

**Add a subsection 1-5.2.6 as follows:**

**Sec. 1-5.2.6. Secondary Supply Capacity and Sources.** The secondary supply shall automatically supply the energy to the system within 30 seconds, and without loss of signals, wherever the primary supply is incapable of providing the minimum voltage required for proper operation. The secondary (standby) power supply shall supply energy to the system in the event of total failure of the primary (main) power supply or when the primary voltage drops to a level insufficient to maintain functionality of the control equipment and system components. Under maximum quiescent load (system functioning in a non-alarm condition), the secondary supply shall have sufficient capacity to operate a protected premises, central station, or proprietary system for 24 hours; or an auxiliary or remote station system for 60 hours; and, at the end of that period, shall be capable of operating all alarm notification appliances used for evacuation or to direct aid to the location of an emergency for 5 minutes. The secondary power supply for emergency voice/alarm communications service shall be capable of operating the system under maximum quiescent load for 24 hours and then shall be capable of operating the system during a fire or other emergency condition for a period of 2 hours. Fifteen minutes of evacuation alarm operation at maximum connected load shall be considered the equivalent of 2 hours of emergency operation. For a combination system, the secondary supply capacity required above shall include the load of any non-fire related equipment, functions or features. The secondary supply shall consist of one of the following:

(a) A storage battery arranged in accordance with 1-5.2.9.

(b) An automatic starting, engine-driven generator arranged in accordance with 1-5.2.10 and storage batteries with 4 hours of capacity under maximum normal load followed by 5 minutes of alarm/emergency capacity arranged in accordance with 1-5.2.9.

~~(c) Multiple engine-driven generators, one of which is arranged for automatic starting, arranged in accordance with 1-5.2.10, and capable of supplying the energy required herein, with the largest generator out of service. The second generator shall be permitted to be started by pushbutton.~~

~~Operation on secondary power shall not affect the required performance of a fire alarm system. The system shall produce the same alarm, supervisory, and trouble signals and indications (excluding the ac power indicator) when operating from the standby power source as are produced when the unit is operating from the primary power source.~~

**Amend Section 1-5.5.4 4.4.4.4 as follows:**

**Sec. 1-5.5.4 4.4.4.4 Wiring.**

The installation of all wiring, cable and equipment shall be in accordance with the California Electrical Code, and specifically with Article 760, Article 770 and Article 800, where applicable. Optical Fiber Cables shall be protected against mechanical injury in accordance with Article 760.

**Add a subsection 1-7.2.2 as follows:**

~~(b) Record drawings; and~~

~~(c) Written operating instructions shall be provided at a location approved by the enforcing agency.~~

**Add a section 1-5.4.7.1 as follows:**

**Sec. 1-5.4.7.1. Supplementary Audible Notification Appliances.** ~~Every public, private or parochial school building having an occupant load of fifty (50) or more students or more than one classroom shall sound the California uniform fire alarm signal as described in Education Code Sections 32002, 32003 and 32004.~~

~~EXCEPTION: When a fire alarm system having a distinctive tone and which is used for no other purpose, is installed, the manner of sounding such alarm shall not be subject to the provisions of Education Code Sections 32002, 32003 and 32004.~~

**Add a Section 1-5.4.8 as follows:**

**Sec 1-5.4.8 Alarm Signal Deactivation.** ~~A means for turning off activated alarm notification appliances shall be permitted only where it is key-operated, located within a locked cabinet, or arranged to provide equivalent protection against unauthorized use. Such means shall be permitted only if a visible zone alarm indication or the equivalent has been provided as specified in 1-5.7.1, and subsequent actuation of initiating devices on other initiating device circuits or subsequent actuation of addressable initiating devices on signaling line circuits cause the notification appliances to reactivate. A means that is left in the "off" position when there is no alarm shall operate in an audible signal until the means is restored to normal.~~

~~EXCEPTION: If permitted by the authority having jurisdiction subsequent actuation of another addressable initiating device of the same type in the same type in the same room or space shall not be required to cause the notification appliance(s) to reactivate.~~

**Amend existing section 1-5.7.1.2 as follows:**

**Sec. 1-5.7.1.2 Zone of Origin.** ~~Fire alarm systems serving two or more zones shall identify the zone of origin of the alarm initiation by annunciation or coded signal as required by the authority having jurisdiction.~~

**Add a Section 1-6.2.2 as follows:**

**Sec. 1-6.2.2.** ~~Every system shall include the following documentation, which shall be delivered to the owner or the owner's representative upon final acceptance of the system:~~

~~(1) \*An owner's manual and installation instructions covering all system equipment~~

~~(2) Record drawings~~

~~(3) The owner's manual and the record drawings shall be provided at a location approved by the authority having jurisdiction.~~

**Add a Section 2-8.1 5.12.4 as follows:**

**Sec. 2-8.1 5.12.4** Each manual fire alarm box shall be securely mounted. The operable part of each manual fire alarm box shall be not less than 3 ½ ft. (1.1m) and not more than 4ft. (1.22m) above the floor level.

**Add a Section 2-8.2.4 5.12.8 as follows:**

**Sec 2-8.2.4 5.12.8** Additional manual fire alarm boxes shall be provided so that the travel distance to the nearest fire alarm box will not be in excess of 200ft. (61m) measured horizontally on the same floor.

**Amend Section 3-2-4 6.4.2.2, Exception 4 (b) as follows:**

Exception 4 ~~(a)~~ (b): Where the installation wiring is enclosed in a 2-hour-rated cable assembly, enclosed in a 2-hour-rated enclosure, other than a stairwell or installation of listed circuit integrity (C.I.) cable, which meets or exceeds a 2-hour fire-resistance rating.

**Add a Section 3-4.2.2.2 as follows:**

**Sec. 3-4.2.2.2\*** All styles of Class A circuits using physical conductors (for example, metallic, optical fiber) shall be installed such that the outgoing and return conductors, exiting from and returning to the control unit, respectively, are routed separately. The outgoing and return (redundant) circuit conductors shall not be run in the same cable assembly (that is, multiconductor cable), enclosure or raceway.

**EXCEPTION:** The outgoing and return (redundant) circuit conductors shall be permitted to be run in the same cable assembly, enclosure or raceway under any of the following conditions:

1. For a distance not to exceed 10 ft (3 m) where the outgoing and return conductors enter or exit the initiating device, notification appliance or control unit enclosures.
2. Where the vertically run conductors are contained in a 2-hour rated cable assembly or enclosed (installed) in a 2-hour rated enclosure or a listed circuit integrity (c.i.) cable, which meets or exceeds a 2-hour fire resistive rating.
3. Where looped conduit/raceway systems are provided, single conduit/raceway drops to individual devices or appliances shall be permitted.
4. Where looped conduit/raceway systems are provided, single conduit/raceway drops to multiple devices or appliances installed within a single room not exceeding 1000 ft<sup>2</sup> (92.9 m<sup>2</sup>) in area shall be permitted.

**Amend Section 3-8.2.36.8.5.4 as follows:**

(~~§ 5~~) Operation of the patient room smoke detector in Group I, Division 1.1, 1.2 and 2 Occupancies shall not include any alarm verification feature

**Add a Section 3-8.3.2.3.1 (b) 6.8.5.4.1 (2) as follows:**

**Sec. 3-8.3.2.3.1 (b) 6.8.5.4.1 (2)** A smoke detector continuously subjected to a smoke concentration above alarm threshold magnitude initiates a system alarm within 30 seconds

**Add a Section 3-8.4.1.3.3.3 (3) c and amend as follows:**

**Sec. 3-8.4.1.3.3.3 (3) c.** Installation of listed circuit integrity (C.I.) cable, which meets or exceeds a two-hour fire-resistance rating.

**Amend Section 4-3.2.1 7.4.2.1 and 4-3.3.1 7.4.3.2 as follows:**

**Amend Section 4-4.5 7.5.1.1 as follows:**

1. **Sec. 4-3.2.1 7.5.1.1.** Audible notification appliances intended for operation in the public mode shall have a sound level of not less than 75dBA at 10 feet (3048mm) or more than 110dBA at the minimum hearing distance from the audible appliance.

**Amend Section 3-8.4.1.3.5.5.1 6.9.6.1 as follows:**

**Sec. 4-3.3.1 7.4.3.2.** Private Mode Audible signals intended for operation in the private mode shall have a sound level of not less than 45dBA at 10 feet (3048mm) or more than 110dBA at the minimum hearing distance from the audible appliance.

**Add Section 3505.1.1 [For SFM] NFPA 72, 1996 Edition, Chapter 2, as amended.**

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**Chapter 2 Household Fire Warning Equipment**

**2-1 Introduction.**



### **2-1.1\* Scope.**

~~This chapter contains minimum requirements for the selection, installation, operation, and maintenance of fire warning equipment for use within family living units. The requirements of the other chapters shall not apply.~~

~~Exception: Where specifically indicated.~~

### **2-1.2 Purpose.**

~~2-1.2.1 Household fire warning systems shall be designed and installed to provide sufficient warning of a fire to enable occupants to escape. It is recognized that household fire warning systems might not be of material assistance to all occupants, such as persons intimate with the ignition of a fire.~~

~~2-1.2.2 This chapter is primarily concerned with life safety, not with protection of property. It presumes that a family has an exit plan.~~

### **2-1.3 General.**

~~2-1.3.1 A control and associated equipment, a multiple or single station alarm(s), or any combination thereof shall be permitted to be used as a household fire warning system, provided the requirements of 2-1.3.7 are met.~~

~~2-1.3.2 Detection and alarm systems for use within the protected household are covered by this chapter.~~

~~2-1.3.3 Supplementary functions, including the extension of an alarm beyond the household, shall be permitted and shall not interfere with the performance requirements of this chapter.~~

~~2-1.3.4 Where the authority having jurisdiction requires a household fire warning system to comply with the requirements of Chapter 4 or any other chapters of this code, the requirements of Section 2-2 shall still apply.~~

~~2-1.3.5 The definitions of Section 1-4 shall apply.~~

~~2-1.3.6 This chapter does not exclude the use of fire alarm systems complying with other chapters of this code in household applications, provided all of the requirements of this chapter are met or exceeded.~~

~~2-1.3.7 All devices, combinations of devices, and equipment to be installed in conformity with this chapter shall be approved or listed for the purposes for which they are intended.~~

~~2-1.3.8 A device or system of devices having materials or forms that differ from those detailed in this chapter shall be permitted to be examined and tested according to the intent of the chapter and, if found equivalent, shall be permitted to be approved.~~

~~2-1.3.9 Equivalency. Nothing in this code is intended to prevent the use of systems, methods, or devices of equivalent or superior quality, strength, fire resistance, effectiveness, durability, and safety over those prescribed by this code, provided technical documentation is submitted to the authority having jurisdiction to demonstrate equivalency and the system, method, or device is approved for the intended purpose.~~

### **2-2 Basic Requirements.**

#### **2-2.1 Required Protection.**

~~2-2.1.1\* This code requires the following detectors within the family living unit.~~

~~2-2.1.1.1 Smoke alarms shall be installed outside of each separate sleeping area in the immediate vicinity of the bedrooms and on each additional story of the family living unit, including basements and excluding crawl spaces and unfinished attics. In new construction, a smoke alarm also shall be installed in each sleeping room.~~

~~2-2.1.1.2\* For family living units with one or more split levels (i.e., adjacent levels with less than one full story separation between levels), a smoke alarm required by 2-2.1.1.1 shall be permitted for an adjacent lower level, including basements. (See Figure A-2-2.1.1.2.)~~

~~Exception: Where there is an intervening door between one level and the adjacent lower level, a smoke alarm shall be installed on the lower level.~~

~~2-2.1.1.3 Automatic sprinkler systems provided in accordance with NFPA 13D, Standard for the Installation of Sprinkler Systems in One- and Two-Family Dwellings and Manufactured Homes, or NFPA 13R, Standard for the Installation of Sprinkler Systems in Residential Occupancies up to and Including Four Stories in Height, shall be interconnected to sound alarm notification appliances throughout the dwelling where a fire warning system is provided.~~

### **2-2.2\* Alarm Notification Appliances.**

~~Each automatic alarm-initiating device shall cause the operation of an alarm that shall be clearly audible in all bedrooms over background noise levels with all intervening doors closed. The tests of audibility level shall be conducted with all household equipment that might be in operation at night in full operation.~~

~~Examples of such equipment are window air conditioners and room humidifiers. (See A-2-2.2 for additional information.)~~

~~2-2.2.1 In new construction, where more than one smoke alarm is required by 2-2.1, smoke alarm shall be arranged so that operation of any smoke alarm causes the alarm in all smoke alarms within the dwelling to sound.~~

~~Exception: Configurations that provide equivalent distribution of the alarm signal.~~

~~2-2.2.2\* Standard Signal. Newly installed alarm notification appliances used with a household fire warning system and single and multiple station smoke alarms shall produce the audible emergency evacuation signal described in ANSI S3.41, Audible Emergency Evacuation Signal. Signals from different notification appliances shall not be required to be synchronized.~~

### **2-2.3 Alarm Notification Appliances for the Hearing Impaired.**

~~In a household occupied by one or more hearing impaired persons, each initiating device shall cause the operation of a visible alarm signal(s) in accordance with 2-4.4.2. Since hearing deficits are often not apparent, the responsibility for advising the appropriate persons shall be that of the hearing impaired party. The responsibility for compliance shall be that of the occupants of the family living unit.~~

~~Exception: A listed tactile signal shall be permitted to be employed.~~

## **2-3 Power Supplies.**

### **2-3.1 General.**

~~2-3.1.1 All power supplies shall have sufficient capacity to operate the alarm signal(s) for at least 4 continuous minutes.~~

~~2-3.1.2 There shall be a primary (main) and a secondary (standby) power source. For electrically powered household fire warning equipment, the primary (main) power source shall be ac; the secondary (standby) power source shall be a battery.~~

~~Exception No. 1: Where the primary (main) power source is an emergency circuit or a legally required standby circuit capable of operating the system for at least 24 hours in the normal condition, followed by not less than 4 minutes of alarm, a secondary (standby) source shall not be required.~~

~~Exception No. 2: Where the primary (main) power source is a circuit of an optional standby system capable of operating the system for at least 24 hours, followed by not less than 4 minutes of alarm, that meets the requirements for either an emergency system or a legally required standby system as defined in NFPA 70, National Electrical Code, Articles 700 and 701, respectively, a secondary (standby) supply shall not be required.~~

~~Exception No. 3: Detectors and alarms powered from a monitored dc circuit of a control unit where power for the~~

~~control unit meets the requirements of Section 2-3 and the circuit remains operable upon loss of primary (main) ac power.~~

~~Exception No. 4: A detector and a wireless transmitter that serves only that detector shall be permitted to be powered from a monitored battery primary (main) source where part of a listed, monitored low power radio (wireless) system. A secondary (standby) source shall not be required.~~

~~Exception No. 5: In existing construction, either an ac primary power source, as described in 2-3.2, or a monitored battery primary (main) power source, as described in 2-3.3, shall be permitted. A secondary (standby) source shall not be required.~~

~~Exception No. 6: Visible notification appliances required by 2-4.4.2.~~

~~Exception No. 7: Where the primary (main) power source is non-electrical, a secondary (standby) source shall not be required. The requirements of 2-3.5 shall apply.~~

### **2-3.2 Primary Power Supply — AC.**

~~2-3.2.1 An ac primary (main) power source shall be a dependable commercial light and power supply source. A visible "power on" indicator shall be provided.~~

~~2-3.2.2 All electrical systems designed to be installed by other than a qualified electrician shall be powered from a source not in excess of 30 volts that meets the requirements for power limited fire alarm circuits as defined in NFPA 70, National Electrical Code, Article 760.~~

~~2-3.2.3 A restraining means shall be used at the plug-in of any cord connected installation.~~

~~2-3.2.4 AC primary (main) power shall be supplied either from a dedicated branch circuit or the unswitched portion of a branch circuit also used for power and lighting. Operation of a switch (other than a circuit breaker) or a ground fault circuit interrupter shall not cause loss of primary (main) power.~~

~~Exception No. 1: Single or multiple station alarms with a supervised rechargeable standby battery that provides at least 4 months of operation with a fully charged battery.~~

~~Exception No. 2: Where a ground fault circuit interrupter serves all electrical circuits within the household.~~

~~2-3.2.5 Neither loss nor restoration of primary (main) power shall cause an alarm signal.~~

~~Exception: An alarm signal shall be permitted within the household but shall not exceed 2 seconds.~~

~~2-3.2.6 Where a secondary (standby) battery is provided, the primary (main) power supply shall be of sufficient capacity to operate the system under all conditions of loading with any secondary (standby) battery disconnected or fully discharged.~~

### **2-3.3 Primary Power Supply — Monitored Battery.**

~~Household fire warning equipment shall be permitted to be powered by a battery, provided that the battery is monitored to ensure that the following conditions are met:~~

~~(a) All power requirements are met for at least 1 year of battery life, including monthly testing.~~

~~(b) A distinctive audible trouble signal sounds before the battery is incapable of operating (from causes such as aging or terminal corrosion) the device(s) for alarm purposes.~~

~~(c) For a unit employing a lock-in alarm feature, automatic transfer is provided from alarm to a trouble condition.~~

~~(d) The unit is capable of producing an alarm signal for at least 4 minutes at the battery voltage at which a trouble signal is normally obtained, followed by not less than 7 days of trouble signal operation.~~

~~(e) The audible trouble signal is produced at least once every minute for 7 consecutive days.~~

~~(f) Acceptable replacement batteries are clearly identified by the manufacturer's name and model number on the unit~~

*near the battery compartment.*

*(g) A readily noticeable, visible indication is displayed when a primary battery is removed from the unit.*

*(h) Any unit that uses a nonrechargeable battery as a primary power supply that is capable of a 10-year or greater service life, including testing, and meets the requirements of 2-3.3(b) through (e) shall not be required to have a replaceable battery.*

#### **2-3.4 Secondary (Standby) Power Supply.**

~~2-3.4.1 Removal or disconnection of a battery used as a secondary (standby) power source shall cause a distinctive audible or visible trouble signal.~~

~~2-3.4.2 Acceptable replacement batteries shall be clearly identified by manufacturer's name and model number on the unit near the battery compartment.~~

~~2-3.4.3 Where required by law for disposal reasons, rechargeable batteries shall be removable.~~

#### **2-3.4.4 Automatic Recharging.**

~~2-3.4.4.1 Automatic recharging shall be provided where a rechargeable battery is used as the secondary (standby) supply. The supply shall be capable of operating the system for at least 24 hours in the normal condition, followed by not less than 4 minutes of alarm. Loss of the secondary (standby) source shall sound an audible trouble signal at least once every minute.~~

~~2-3.4.4.2 The battery shall be recharged within 4 hours where power is provided from a circuit that can be switched on or off by means other than a circuit breaker, or within 48 hours where power is provided from a circuit that cannot be switched on or off by means other than a circuit breaker.~~

~~2-3.4.5 Where automatic recharging is not provided, the battery shall be monitored to ensure that the following conditions are met:~~

~~(a) All power requirements are met for at least 1 year of battery life.~~

~~(b) A distinctive audible trouble signal sounds before the battery capacity has been depleted below the level required to produce an alarm signal for 4 minutes.~~

#### **2-3.5 Primary Power — Non-electrical.**

~~A suitable spring-wound mechanism shall provide power for the non-electrical portion of a listed single station alarm. A visible indication shall be provided to show that sufficient operating power is not available.~~

### **2-4 Equipment Performance.**

#### **2-4.1 General.**

~~The failure of any nonreliable or short-life component that renders the detector inoperable shall be readily apparent to the occupant of the living unit without the need for test.~~

#### **2-4.2 Smoke Alarms and Smoke Detectors.**

~~Each smoke alarm and smoke detector shall detect abnormal quantities of smoke that can occur in a dwelling, shall properly operate in the normal environmental conditions of a household, and shall be in compliance with ANSI/UL 268, Standard for Safety Smoke Detectors for Fire Protective Signaling Systems, or ANSI/UL 217, Standard for Safety Single and Multiple Station Smoke Alarms.~~

~~Sec. 2-4.2.1 The alarm verification feature shall not be used for household fire warning equipment. (This text is continued from CBC, Chapter 35)~~

#### **2-4.3\* Heat Alarms and Heat Detectors.**

~~2-4.3.1 Each heat detector, including a heat detector integrally mounted on a smoke detector, shall detect abnormally~~

~~high temperature or rate-of-temperature rise, and all such detectors shall be listed for not less than 50-ft (15-m) spacing.~~

~~2-4.3.2 Fixed temperature detectors shall have a temperature rating at least 25°F (14°C) above the normal ambient temperature and shall not be rated 50°F (28°C) higher than the maximum anticipated ambient temperature in the room or space where installed.~~

#### **2-4.4 Alarm Signaling Intensity.**

~~2-4.4.1 All alarm-sounding appliances shall have a minimum rating of 85 dBA at 10 ft (3 m).~~

~~Exception: An additional sounding appliance intended for use in the same room as the user, such as a bedroom, may have a sound pressure level as low as 75 dBA at 10 ft (3 m).~~

~~2-4.4.2 Visible notification appliances used in rooms where a hearing-impaired person(s) sleeps shall have a minimum rating of 177 candela for a maximum room size of 14 ft — 16 ft (4.27 m — 4.88 m). For larger rooms, the visible notification appliance shall be located within 16 ft (4.88 m) of the pillow. Visible notification appliances in other areas shall have a minimum rating of 15 candela.~~

~~Exception: Where a visible notification appliance in a sleeping room is mounted more than 24 in. (610 mm) below the ceiling, a minimum rating of 110 candela shall be permitted.~~

#### **2-4.5 Control Equipment.**

~~2-4.5.1 The control equipment shall be automatically restoring upon restoration of electrical power.~~

~~2-4.5.2 The control equipment shall be of a type that “locks in” on an alarm condition. Smoke detection circuits shall not be required to lock in.~~

~~2-4.5.3 If a reset switch is provided, it shall be of a self-restoring type.~~

~~2-4.5.4 An alarm-silencing switch or an audible trouble-silencing switch shall not be required to be provided.~~

~~Exception: Where the switch’s silenced position is indicated by a readily apparent signal.~~

~~2-4.5.5 Each electrical fire warning system and each single station smoke detector shall have an integral test means to allow the householder to check the system and the sensitivity of the detector(s).~~

#### **2-4.6 Monitoring Integrity of Installation Conductors.**

~~All means of interconnecting initiating devices or notification appliances shall be monitored for the integrity of the interconnecting pathways up to the connections to the device or appliance so that the occurrence of a single open or single ground fault, which prevents normal operation of the system, is indicated by a distinctive trouble signal.~~

~~Exception No. 1: Conductors connecting multiple station alarms, provided a single fault on the wiring cannot prevent single station operation of any of the interconnected detectors.~~

~~Exception No. 2: Circuits extending from single or multiple station alarms to required remote notification appliances, provided operation of the test feature on any detector causes all connected appliances to activate.~~

#### **2-4.7 Combination System.**

~~2-4.7.1 Where common wiring is employed for a combination system, the equipment for other than the fire warning signaling system shall be connected to the common wiring of the system so that short circuits, open circuits, grounds,~~

~~or any fault in this equipment or interconnection between this equipment and the fire warning system wiring does not interfere with the supervision of the fire warning system or prevent alarm or trouble signal operation.~~

**~~2-4.7.2~~** ~~In a fire burglar system, the operation shall be as follows:~~

~~(a) A fire alarm signal shall take precedence or be clearly recognizable over any other signal even when the non-fire alarm signal is initiated first.~~

~~(b) Distinctive alarm signals shall be used so that fire alarms can be distinguished from other functions such as burglar alarms. The use of a common sounding appliance for fire and burglar alarms shall be permitted where distinctive signals are used. (See 2-2.2.2.)~~

#### **2-4.8 Low Power Wireless Systems.**

~~Household fire warning systems utilizing low power wireless transmission of signals within the protected household shall comply with the requirements of Section 3-13.~~

~~Exception: Paragraph 3-13.4.5 shall not apply.~~

#### **2-4.9 Supervising Station Systems.**

~~**2-4.9.1** Any communications method described in Section 4-5 shall be permitted for transmission of signals from household fire warning equipment to a supervising station. All of the provisions of Section 4-5 shall apply, as appropriate.~~

~~Exception No. 1: Only one telephone line shall be required for one- and two-family residences.~~

~~Exception No. 2: Each DACT shall be required to be programmed to call a single DACR number only.~~

~~Exception No. 3: Each DACT serving a one- or two-family residence shall transmit a test signal to its associated receiver at least monthly.~~

~~**2-4.9.2\*** On receipt of an alarm signal from household fire warning equipment, the supervising station shall immediately (within 90 seconds) retransmit the alarm to the public fire communications center.~~

~~Exception: The supervising station shall be permitted to contact the residence for verification of an alarm condition and, where acceptable assurance is provided within 90 seconds that the fire service is not needed, retransmission of an alarm to the public service fire communications center shall not be required.~~

#### **2-5 Installation.**

##### **2-5.1 General.**

##### **2-5.1.1 General Provisions.**

~~**2-5.1.1.1\*** All equipment shall be installed in a workmanlike manner.~~

~~**2-5.1.1.2** All devices shall be so located and mounted that accidental operation is not caused by jarring or vibration.~~

~~**2-5.1.1.3** All installed household fire warning equipment shall be mounted so as to be supported independently of its attachment to wires.~~

~~**2-5.1.1.4** All equipment shall be restored to normal as promptly as possible after each alarm or test.~~

**2-5.1.1.5** The supplier or installing contractor shall provide the owner with:

- (a) An instruction booklet illustrating typical installation layouts.
- (b) Instruction charts describing the operation, method and frequency of testing, and proper maintenance of household fire warning equipment.
- (c) Printed information for establishing a household emergency evacuation plan.
- (d) Printed information to inform owners where they can obtain repair or replacement service, and where and how parts requiring regular replacement (such as batteries or bulbs) can be obtained within 2 weeks.

**2-5.1.2 Interconnection of Detectors or Multiple Station Alarms.**

- (a) Where the interconnected wiring is unsupervised, no more than 18 multiple station alarms shall be interconnected in a multiple station configuration.
- (b) Where the interconnecting wiring is supervised, the number of interconnected detectors shall be limited to 64.

**2-5.1.2.1** Interconnection that causes other alarms to sound shall be limited to an individual family living unit. Remote annunciation from single or multiple station alarms shall be permitted.

**2-5.1.2.2** No more than 12 smoke alarms shall be interconnected in a multiple station connection. The remainder of the alarms shall be permitted to be of other types.

**2-5.2\* Alarm and Detector Location and Spacing.**

**2-5.2.1 Smoke Alarms and Smoke Detectors.**

**2-5.2.1.1** Smoke alarms and smoke detectors in rooms with ceiling slopes greater than 1 ft in 8 ft (1 m in 8 m) horizontally shall be located at the high side of the room.

**2-5.2.1.2 A** Smoke alarms and smoke detector installed in a stairwell shall be so located as to ensure that smoke rising in the stairwell cannot be prevented from reaching the detector by an intervening door or obstruction.

**2-5.2.1.3 A** Smoke alarms and smoke detector installed to detect a fire in the basement shall be located in close proximity to the stairway leading to the floor above.

**2-5.2.1.4** The Smoke alarms and smoke detector installed to comply with 2-2.1.1.1 on a story without a separate sleeping area shall be located in close proximity to the stairway leading to the floor above.

**2-5.2.1.5** Smoke alarms and smoke detectors shall be mounted on the ceiling at least 4 in. (102 mm) from a wall or on a wall with the top of the detector not less than 4 in. (102 mm) nor more than 12 in. (305 mm) below the ceiling.

*Exception:* Where the mounting surface might become considerably warmer or cooler than the room, such as a poorly insulated ceiling below an unfinished attic or an exterior wall, the detectors shall be mounted on an inside wall.

**2-5.2.1.6** Smoke alarms and smoke detectors shall not be located within kitchens or garages, or in other spaces where temperatures can fall below 40°F (4°C) or exceed 100°F (38°C). Smoke detectors shall not be located closer than 3 ft (0.9 m) horizontally from:

- (a) The door to a kitchen.
- (b) The door to a bathroom containing a tub or shower.
- (c) The supply registers of a forced air heating or cooling system, and outside of the airflow from those registers.

*Exception:* Detectors specifically listed for the application.

### **2-5.2.2\* Heat Detectors Heat Alarms.**

**2-5.2.2.1** On smooth ceilings, heat detectors shall be installed within the strict limitations of their listed spacing.

**2-5.2.2.2** For sloped ceilings having a rise greater than 1 ft in 8 ft (1 m in 8 m) horizontally, the detector shall be located on or near the ceiling at or within 3 ft (0.9 m) of the peak. The spacing of additional detectors, if any, shall be based on a horizontal distance measurement, not on a measurement along the slope of the ceiling.

**2-5.2.2.3\*** Heat detectors and heat alarms shall be mounted on the ceiling at least 4 in. (102 mm) from a wall or on a wall with the top of the detector not less than 4 in. (102 mm) nor more than 12 in. (305 mm) below the ceiling.

*Exception: Where the mounting surface might become considerably warmer or cooler than the room, such as a poorly insulated ceiling below an unfinished attic or an exterior wall, the detectors shall be mounted on an inside wall.*

**2-5.2.2.4** In rooms with open joists or beams, all ceiling-mounted detectors shall be located on the bottom of such joists or beams.

**2-5.2.2.5\*** Detectors installed on an open-joisted ceiling shall have their smooth ceiling spacing reduced where this spacing is measured at right angles to solid joists; in the case of heat detectors, this spacing shall not exceed 1/2 of the listed spacing.

### **2-5.3 Wiring and Equipment.**

The installation of wiring and equipment shall be in accordance with the requirements of NFPA 70, National Electrical Code, Article 760.

### **2-6 Maintenance and Tests.**

#### **2-6.1\* Maintenance.**

Where batteries are used as a source of energy, they shall be replaced in accordance with the recommendations of the alarm equipment manufacturer.

*Exception: Batteries described in 2-3.3(h).*

#### **2-6.2\* Tests.**

**2-6.2.1 Single and Multiple Station Smoke Alarms.** Homeowners shall inspect and test smoke alarms and all connected appliances in accordance with the manufacturer's instructions at least monthly.

**2-6.2.2 Fire Alarm Systems.** Homeowners shall test systems in accordance with the manufacturer's instructions and shall have every household fire alarm system having a control panel tested by a qualified service technician at least every 3 years. This test shall be conducted according to the methods of Chapter 7.

### **2-7 Markings and Instructions.**

All household fire warning equipment or systems shall be plainly marked with the following information on the unit:

- (a) Manufacturer's or listee's name, address, and model number;
- (b) A mark or certification that the unit has been approved or listed by a testing laboratory;
- (c) Electrical rating (where applicable);
- (d) Temperature rating (where applicable);
- (e) Spacing rating (where applicable);
- (f) Operating instructions;
- (g) Test instructions;



(h) Maintenance instructions;

(i) Replacement and service instructions.

~~Exception: Where space limitations prohibit inclusion of 2-7(g), (h), and (i), a label or plaque suitable for permanent attachment within the living unit, or a manufacturer's manual, shall be provided with the equipment and referenced on the equipment. In the case of a household fire warning system, the required information shall be prominently displayed at the control panel.~~

**Existing SFM Amendment, Section 3-12.6.5.1 of NFPA 72, 1996 to be renumbered as Section 3-8.4.1.3.5.5.1  
Add to Section 3-8.4.1.3.5.5.1 as follows:**

~~**3.8.4.1.3.5.5.1.** Special fire alarm provisions for occupancies having floors used for human occupancy located more than 75 feet (22860mm) above the lowest level of the fire department vehicle access, are found in Title 24, Part 2, Chapter 4, of the California Building Code. Those provisions include providing a central control station. The requirements provided for, in a fire command center, may be included within the central control station.~~

**3505.3 [For SFM] UL 217, 1997 Edition**

~~Add a Chapter 6A.1 as follows:~~

~~Sec. 6A.1. Each single and multiple station smoke alarm may be provided with an automatically resettable alarm silencing means that has a fixed or variable time setting and that silences the smoke alarm for a maximum of 15 minutes. Alarm silencing shall not disable the smoke alarm. It may reduce the sensitivity to no more than 4 percent obscuration (0.0177 O.D. per foot). Each device shall operate a distinctive audible trouble signal while in the silence mode. This may be done with a short beep similar to the low battery signal or by visible indication. Following the silenced period, the smoke alarm shall restore automatically to its intended operation. Silencing of one smoke alarm of a multiple station system shall not prevent an alarm operation from the other smoke alarm in the system. See paragraphs 33.10 and 33.11~~

**3505.4 [For SFM] UL 268, 1996 Edition.**

~~F. A circuit for supplementary signal annunciator, signal sounding appliance, motor controller, or similar appliance, provided that a break, short or ground fault in no way affects the operation of the detector other than to cause the omission of the supplementary feature.~~

**3505.5 [For SFM] UL 268A, 1998 Edition.**

~~Amend section 27.1, exception F, as follows:~~

~~F. A circuit for supplementary signal annunciator, signal sounding appliance, motor controller, or similar appliance, provided that a break, short or ground fault in no way affects the operation of the air duct smoke detector, except for omission of the supplementary feature.~~

**3505.6 2 [For SFM] UL 864, 1996 2003 Edition amend as follows:**

~~Amend Figure No. 3-1 55.1 on page 7 129 as follows:~~

~~**RETARD-RESET-RESTART PERIOD – MAXIMUM 30 SECONDS -** No alarm obtained from control unit.  
Maximum permissible time is 60 30 seconds.~~

~~**Amend Section 6.2 55.2.2 on page 128 as follows:**~~

~~**# Where** an alarm verification feature is provided, the maximum retard-reset-restart period before an alarm signal can be confirmed and indicated at the control unit, including any control unit reset time and the power-up time for the detector to become operational for alarm, shall not exceed 30 seconds. **(The balance to the section text is to remain unchanged).**~~

~~Delete exception to Section 6.5.~~

~~Add a Section 6.7 55.2.9 as follows:~~

~~Smoke detectors connected to an alarm verification feature shall not be used as releasing devices.~~

**Exception:** Smoke detectors which operate their releasing function immediately upon alarm actuation independent of alarm verification feature.

**Amend Section 21.22 as follows:**

~~The maximum retard-reset-restart period of alarm verification to a system control unit, including any time delay due to system reset and power-up time of the smoke detector to become operational for alarm, shall not exceed 30 seconds. (The balance to the section text is to remain unchanged).~~

**Amend Section 49.1.14 89.1.10 as follows:**

The existing text of this section is to remain as printed with one editorial amendment as follows:

THE TOTAL DELAY (CONTROL UNIT PLUS SMOKE DETECTORS) SHALL NOT EXCEED 30 SECONDS. **(The balance to the section text is to remain unchanged).**

~~3505.7 Reserved.~~

~~3505.8 Reserved.~~

~~3505.9 Reserved.~~

~~3505.10~~ 3 [For SFM] NFPA 13, 1999 2002 Edition

~~i. 6-4.5.8~~

9.3.5.8.3

Add a sentence after the section numbers before the first sentence as follows:

Where pipe is used for sway bracing, it shall have a wall thick-ness of not less than Schedule 40.

Also:

Table 6-4.5.8 delete all references to Schedule 10.

**Add a Section 6-4.5.8 as follows:**

~~Sec. 6-4.5.8\* Sway bracing shall be tight. For individual braces, the slenderness ratio ( $l/r$ ) shall not exceed 300 where  $l$  is the length of the brace and  $r$  is the least radius of gyration. Where threaded pipe is used as part of a sway brace assembly, it shall not be less than Schedule 30. All parts and fittings of a brace shall lie in a straight line to avoid eccentric loadings on fittings and fasteners. For longitudinal braces only, the brace shall be permitted to be connected to a tab welded to the pipe in conformance with 3-6.2. For individual braces, the slenderness ratio,  $l/r$ , shall not exceed 300 where  $l$  is the length of the brace and  $r$  is the least radius of gyration. For tension-only braces, two tension-only brace components opposing each other must be installed at each lateral or longitudinal brace location. For all braces, whether or not listed, the maximum allowable horizontal load shall be based on the weakest component of the brace with safety factors. The loads determined in 6-4.5.6 shall not exceed the lesser of the maximum allowable loads provided in Table 6-4.5.8 or the manufacturer's certified maximum allowable horizontal loads for 30 to 44 degree, 45 to 59 degree, 60 to 89 degree, and 90 degree brace angles. These certified allowable horizontal loads must include a minimum safety factor of 1.5 against the ultimate break strength of the brace components and then be further reduced according to the brace angles.~~

~~EXCEPTION: Materials other than pipe, not specifically included in Table 6-4.5.8 shall be permitted to be used if certified by a registered professional engineer to support the loads determined in accordance with the above criteria. Calculations shall be submitted where required by the authority having jurisdiction.~~

**Amend Section 9.3.5.8.11 to read:**

**Section 9.3.5.8.11** ~~Other pipe schedules and m-~~Materials other than pipe not specifically included in Table 9.3.5.8.9(a), 9.3.5.8.9(b) and 9.3.5.8.9(c) shall be permitted to be used if certified by a registered professional

engineer to support the loads determined in accordance with the above criteria. Calculations shall be submitted where required by the authority having jurisdiction

#### 6-4.7.3 & 6-4.7.4

Revise as follows:

~~Lag screws or power driven fasteners shall not be used to attach braces to the building structure.~~

#### **Section 9.3.5.9.4 is not adopted by the SFM - lag screws are not permitted.**

#### **Add Sections 6-4.7.3 and 6-4.7.4 as follows:**

~~Sec. 6-4.7.3 Powder driven fasteners shall not be used to attach braces to the building structure.~~

~~EXCEPTION: Powder driven fasteners shall be permitted where they are specifically listed for service in resisting lateral loads in areas subject to earthquakes.~~

~~Sec. 6-4.7.4 Powder driven fasteners shall not be used to attach hangers to the building structure where the systems are required to be protected against earthquakes using a horizontal force factor exceeding 0.50 W<sub>p</sub> where W<sub>p</sub> is the weight of the water-filled pipe.~~

~~Also, delete the Exception.~~

~~Also, delete the portion of Table 6-4.5.9 related to lag screws.~~

~~Delete the portion of Table 9.3.5.9.1 related to lag screws~~

#### ~~iii. A-4-6.4.3.5.1~~

~~The following forms (see attached ASSIGNED LOAD TABLE~~

~~METHOD FORM) are provided to assist in the design, plan review, installation, and inspection of seismic braces. This form is not required to be used for every brace. A worst case brace calculation is considered acceptable.~~

**NOTE:** ~~The specific statutes authorizing the SFM to propose this amendment to Chapter 35 as shown above is as follows:~~

- ~~Health and Safety Code sections 13143 and 18949.2(b), (c)~~

#### **ITEM 8-25 – Committee Recommendations**



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**§ 3505.1: APPROVED AS SUBMITTED. §3505.1.1, 3505.2 and 3505.3: APPROVED AS RESUBMITTED.**

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\* \* \*

(END OF ITEM)

## **INITIAL STATEMENT OF REASONS**

### **STATEMENT OF SPECIFIC PURPOSE AND RATIONALE FOR THE PROPOSED AMENDMENT TO THE CBC, PART 2:**

The specific purpose of the rulemaking effort is as follows:

#### **Sections 305.1 and 305.11.3**

Last year the SFM developed fire sprinkler and alarm regulations for new schools and modernization of existing schools as a result of SB 575. The Division of the State Architect (DSA) has requested that the SFM amend these two Sections of the CBC to provide clarity in the regulations.

#### **Section 904.1.2**

The current adoption of the California Building Code has out of date references to NFPA standards. Those standards are being repealed here, and then updated in Chapter 35.

During the Building, Fire and Other Advisory Committee meeting, minor editorial modifications were made for clarity purposes. The modifications had not affect on the application of this regulation.

#### **Section 904.2.1**

Editorial change to specify that the California Fire Code is the pertinent code.

#### **Section 1007.5.4**

For years the SFM and OSHPD have used an OSFM Operational Bulletin for the storage and use of combustible materials and furniture in nurse's stations open to exit corridors. The SFM recognizes the bulletin as an underground regulation and seeks to correct the omission in the regulation with this proposal.

During the Building, Fire and Other Advisory Committee meeting, minor editorial modifications were made for clarity purposes. The modifications had not affect on the application of this regulation.

#### **Section 1108A and 1118A**

Department of Housing and Community Development (HCD) have rewritten Chapter 11A. The new section 1118A addresses the fire life and safety requirements for egress and areas for evacuation assistance which is under the SFM's authority. HCD and the SFM worked corporately to amend this section.

#### **Chapter 35**

The National Fire Protection Association (NFPA) has updated many of the standards. The current building code references these NFPA standards. This proposed amendment will bring the California Building Code up-to-date with referenced NFPA standards.

The actions described above are reasonably necessary to carry out the purpose for which it is proposed. The rationale for these actions is to establish minimum requirements for the prevention of fire and for the protection of life and against fire and panic in any building or structure used or intended for use as a state regulated occupancy.

During the Building, Fire and Other Advisory Committee meeting it was noted that five referenced standards were shown that are still under development. The State Fire Marshal has withdrawn these standards from this rulemaking package as they were inadvertently included.

#### **TECHNICAL, THEORETICAL, AND EMPIRICAL STUDY, REPORT, OR SIMILAR DOCUMENTS:**

The SFM did not rely on any technical, theoretical, and empirical study, report, or similar document for the development of the proposed amendment to this existing regulation.

#### **CONSIDERATION OF REASONABLE ALTERNATIVES:**

Alternatives Considered:

1. The proposed SFM additions, amendments, and repeal are primarily editorial in nature. The SFM considered holding these editorial changes until the next code adoption cycle.

**Rejected:** This alternative was rejected in that these editorial changes will assist with a seamless transition from one model code to another.

#### **REASONABLE ALTERNATIVES THE AGENCY HAS IDENTIFIED THAT WOULD LESSEN ANY ADVERSE IMPACT ON SMALL BUSINESS:**

The SFM has determined that these proposed amendments will not have an adverse impact on small business. Therefore, no alternatives have been identified or that have otherwise been identified and brought to the attention of the SFM that would lessen any adverse impact on small business.

**FACTS, EVIDENCE, DOCUMENTS, TESTIMONY, OR OTHER EVIDENCE OF NO SIGNIFICANT ADVERSE IMPACT ON BUSINESS:**

The SFM has made an initial determination that the proposed action will not have a significant adverse impact on business.

**DUPLICATION OR CONFLICT WITH FEDERAL REGULATIONS:**

The SFM has determined that this proposed rulemaking does not unnecessary duplicate or conflict with federal regulations contained in the Code of Federal Regulations that address the same issues as this proposed rulemaking.

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